

Amendment and Response
Applicant: Douglas Edward Woehler
Serial No.: 10/685,364
Filed: October 14, 2003
Docket No.: C283.101.102
Title: LOCATION SYSTEM

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REMARKS

The following remarks are made in response to the Non-Final Office Action mailed July 17, 2006. Claims 1-15 and 30-46 were rejected. With this Response, claims 1 and 32 have been amended. Claims 60-63 have been added. Claims 1-15, 30-46, and 60-63 remain pending in the application and are presented for reconsideration and allowance.

Claim Objections

The examiner objected to claims 3 and 32 because of minor informalities related to the misspelling of the word "closest." With this response, such misspellings have been corrected. As such, Applicant requests that the objections to claims 3 and 32 be withdrawn.

Claim Rejections under 35 U.S.C. § 103

The Examiner rejected claims 1-15 and 30-46 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,920,390 to Mallet et al. ("Mallet") in view of U.S. Patent No. 4,527,158 to Runnels et al. ("Runnels") and U.S. Publication No. 2003/0125868 to Giannopoulos et al. (Giannopoulos). Applicant respectfully submits that neither Mallet, Runnels, nor Giannopoulos, either alone or in combination, teach or suggest the invention as recited by independent claim 1.

Amended independent claim 1 recites a ground surface location and identification system including a location transmitter and a location identifier. The location transmitter is positioned at a location within a coverage area and has stored therein a physical location code corresponding to the location and is configured to provide an optical signal representative of the physical location code. The location identifier is configured to couple to a moveable object and has an object identification code representative of the object stored therein, and is configured to receive the optical signal and to transmit an identification signal representative of the physical location code and the object identification code.

Mallet does not teach or suggest the invention as recited by independent claim 1. Mallet discloses a surface traffic movement system for reducing runway incursions due to lost or disoriented aircraft. The system includes programmable message boards 10 that are positioned at locations such as runway intersections and taxiways, with each message board 10 including a transceiver and having a key location identifier (col. 2, lines 49-53; col. 5, line 61 – col. 6, line 2). Via the transceiver (e.g. wireless communication), air traffic control

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personnel can convey aircraft specific messages to message boards 10 which provide visual confirmation of location, route assignment, taxi guidance, and runway status to aircraft Pilots know if they are off an intended course when they do not see their aircraft ID displayed on a message board 10 (col. 6, lines 46-52). A vehicle operator (e.g. aircraft pilot) reports the key location identifier to traffic control personnel via any normal verbal communications equipment, thus locating the vehicle at a particular message board and, thus, at a specific location on the airport surface at which the identified message board is positioned. For vehicles equipped with digital message signaling devices, the transceiver of the identified message board can receive this vehicle signal and transmit the data to air traffic control personnel.

Mallet does not disclose a location transmitter positioned at a location with a physical location code stored therein corresponding to the location and configured to provide an optical signal representative of the physical location code. Instead, Mallet discloses only a message board having a transceiver and a key location identifier indicative of a location of the message board. Mallet does not teach providing an optical signal with the transceiver that is representative of the key location identifier. (See also, Examiner's Remarks)

Mallet also fails to disclose a location identifier as recited by claim 1. In Applicant's invention of claim 1, the location identifier is configured to receive an optical signal from the location transmitter which is representative of the physical location code of the location transmitter and to then transmit a signal which is representative of both the physical location code of the transmitter of the object identification code of the object to which the location transmitter is coupled configured to couple to a moveable object and having an object identification code representative of the moveable object stored therein, wherein the location identifier is configured to receive the optical signal from the location transmitter and to transmit an identification signal representative of the physical location code and the object identification code. Mallet teaches only that the message board transceiver can receive a signal from a signaling device on a vehicle, such as an airplane, and then transmit its key location identifier and the received vehicle signal.

For example, in a scenario where the moveable object is an aircraft, the message board transmitter of Mallet receives a digital signal from a signaling device on the aircraft

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and then transmits a signal including the key location identifier and the vehicle signal data. Conversely, in accordance with claim 1, the location identifier coupled to the aircraft is configured to receive the optical signal representative to the physical location code from the corresponding location transmitter and to then transmit the object identification code of the aircraft to which it is coupled and the physical location code received from the transmitter.

In light of the above, Applicant submits that Mallet teaches neither the location transmitter nor the location identifier as recited by independent claim 1.

Runnels also does not teach or suggest the invention as recited by independent claim 1. Runnels discloses an aircraft collision pilot warning system. The warning system includes a transmitter and sensor beacon which is mounted to an aircraft. The transmitter includes a strobe configured to provide light in the visible spectrum and an LED array configured to provide light in both the visible and infrared spectrums. The sensor portion of the beacon is configured to sense and detect the presence of light from both the visible and infrared spectrums emitted from a similar beacon on another aircraft. Upon detection of such light, sensor provides a warning indication to a pilot of the aircraft to which it is mounted. While the transmitter portion of the beacon outputs light, the transmitter has neither a physical location code corresponding to a location of the transmitter nor is the light output representative of such a physical location code. Additionally, while the sensor portion of the beacon receives and identifies light transmitted from a beacon of another aircraft, the sensor does not include an object identification code representative of the aircraft to which it is coupled, nor does the sensor transmit an identification signal representative of both such an object identification code nor a physical location code of a beacon from which the received light is transmitted.

In light of the above, Applicant submits that Runnels teaches neither the location transmitter nor the location identifier as recited by independent claim 1.

Giannopoulos also does not teach or suggest the invention as recited by independent claim 1. Giannopoulos discloses an in-building navigation system for guiding a user to a specific location within a building, such as to a store in a shopping mall. The navigation system includes light fixtures within the building that are modulated so that light output from the fixture is encoded with a unique code associated with the light fixture. A receiving unit carried by a user detects the modulated light and determines the unique code associated with

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the light fixture from which the modulated light was received. Using the unique code, the receiving unit gives instructions to the user on how to reach a specific location. While the receiving unit receives modulated light encoded with a unique code and provides instructions to a user based on the unique code, the receiving unit does not include an object identification code representative of neither the receiving unit nor the user, nor does the receiving unit transmit an identification signal representative of both such an object identification code nor the unique code of the light fixture.

In light of the above, Applicant submits that Giannopoulos does not teach or suggest a location identifier as recited by independent claim 1 and, as such, fails to teach or suggest the ground surface location and identification system of independent claim 1.

In view of the above, Applicant respectfully submits that neither Mallet, Runnels, nor Giannopoulos, either alone or in combination, teach or suggest the invention as recited by independent claim 1.

Independent claim 30 recites an airfield ground surface location system including a location transmitter and a location identifier. The location transmitter positioned at a location on an airfield and includes a light source adapted to receive power from a power source and a location encoder having a physical location code (PLC) representative of the location stored therein and configured to generate an optical signal encoded with the PLC by turning the power to the light source on and off based on the PLC. The location identifier is adapted to couple to a vehicle and includes an optical receiver, a signal processor, and a transmitter. The optical receiver is configured to receive and convert the optical signal to an electrical signal. The signal processor has a vehicle code representative of the vehicle stored therein and is configured to decode the PLC from the electrical signal and to provide a vehicle location code representative of the vehicle code and the PLC. The transmitter is configured to transmit an identification signal representative of the vehicle location code.

Independent claim 30 includes limitations similar to those recited by independent claim 1. As such, for reasons similar to those described above with respect to independent claim 1, Applicant respectfully submits that neither Mallet, Runnels, nor Giannopoulos, either alone or in combination, teach or suggest the invention as recited by independent claim 30.

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In view of the above, independent claims 1 and 30 are taught or suggested by Mallet, Runnels, or Giannopoulos, either alone or in combination. Furthermore, dependent claims 2-15 further define patentably distinct independent claim 1, and dependent claims 31-46 further define patentably distinct independent claim 30. Therefore, Applicant respectfully requests that the rejections of claims 1-15 and claims 30-46 under 35 U.S.C. § 103(a) be withdrawn and allowance of claims 1-15 and claims 30-46.

Added Claims

With this Response, claims 60-63 have been added. Claims 60 and 61 are directed to an airfield ground surface location system. Applicant submits that claims 60-63 are not taught or suggested by the cited references and allowance of claims 60-63 is respectfully requested.

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CONCLUSION

In view of the above, Applicant respectfully submits that pending claims 1-15, 30-46, and 60-63 are in form for allowance and are not taught or suggested by the cited references. Therefore, reconsideration and withdrawal of the rejections of claims 1-15, 30-46 and allowance of claims 1-15, 30-46, and 60-63 are respectfully requested.

No fees are required under 37 C.F.R. 1.16(b)(c). However, if such fees are required, the Patent Office is hereby authorized to charge Deposit Account No. 50-0471.

The Examiner is invited to contact the Applicant's representative at the below-listed telephone numbers to facilitate prosecution of this application.

Any inquiry regarding this Amendment and Response should be directed to Steven E. Dicke at Telephone No. (612) 573-2002, Facsimile No. (612) 573-2005. In addition, all correspondence should continue to be directed to the following address:

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Respectfully submitted,

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Date: October 17, 2006

SED:bac

CERTIFICATE UNDER 37 C.F.R. 1.8:

The undersigned hereby certifies that this paper or papers, as described herein, are being transmitted via facsimile to Facsimile No. (571) 273-3300 on this 17th day of October, 2006.

By: Steven E. Dicke

Name: Steven E. Dicke